

2018 IR Assessment Methodology Comments Received:

Dear Mr. Goodwin,

Please find the attached letter to Ms. Molly Rippke of the Michigan Department of Environmental Quality . Our Association, the Michigan Waste and Recycling Association, delivered comments on the draft E.coli TMDL document earlier this spring. I believe all comments contained in that letter are relevant for the WATER QUALITY AND POLLUTION CONTROL IN MICHIGAN 2018 SECTIONS 303(d), 305(b), and 314 INTEGRATED REPORT Draft Assessment Methodology. If you have any questions you can contact me at sessling@wm.com or you can call me at 269-838-8403. Thank you.

Regards,

Steve Essling

Government & Regulatory Affairs/Compliance Manager

sessling@wm.com

Waste Management

1899 North M-43 Highway

Hastings, Mi 49058

Cell: 269-838-8403

Fax: 269-945-4582

(see Attachment, following 3 pages)



Michigan Waste & Recycling Association

124 W. Allegan, Suite 1900 • Lansing MI 48933 • Phone 517-484-6561

May 19, 2017

Molly Rippke
Aquatic Biologist Specialist
Water Resources Division
Michigan Department of Environmental Quality
P.O. Box 30241
Lansing MI 48909

Re: Draft Michigan's Statewide E. Coli Total Maximum Load

Dear Ms. Rippke,

Michigan Waste and Recycling Association (MWRA) appreciates the opportunity to comment on the DRAFT Michigan's Statewide E. Coli Total Maximum Load Requirements as they relate to the Industrial Storm Water Permit. The Michigan Waste and Recycling Association represents businesses and municipalities that provide waste and recycling related services. The group's members advocate for safe, economically sustainable and environmentally sound waste hauling, disposal, recycling, composting and landfill gas to energy programs. Its members, conduct business throughout Michigan, and include companies and communities that collect and manage trash, recycling, yard waste, equipment manufacturers and distributors, as well as a variety of related service providers.

The first comment that MWRA would like to make is that the name or title of this DRAFT project, "Michigan's Statewide E. Coli Total Maximum Daily Load" is misleading and may confuse the unknowledgeable or uninformed to believe all or a significant percentage of the state's waters are dangerous or in some way contaminated. When the word "statewide" is used in the title, it gives the reader the idea that the E. Coli issue is statewide. This program is one that documents waters that have been tested and found to be in good condition and other waters have been found to have E. coli concentration that "needs attention". We say, "needs attention" since E. coli is an indicator not a true designation of impairment.

The direction of the Department seems to be proposing to place a regulatory burden without consideration of how Industry is to implement a viable method to mitigate or solve an issue. The program suggests implementing control measures based on a bacterial indicator (E. coli) parameters and its concentration can easily be affected by non-regulated sources including and in some (if not many) cases the main source is the State's wildlife. There are too many unknowns with respect to sampling, causes for impact, and determination of impairment that further investigation is needed prior to implementing policy. Otherwise, these unknowns, unfairly shift to the regulated community, placing the burden of proof of non-impact or treatment, regardless of the actual cause. In many cases, the problem is storm water ponds that attract wildlife, but were constructed and are being used for compliance to a different set of regulatory requirements.

When reviewing the interactive maps in the State of Michigan "MIWATERS" website, the map indicates the locations of the current NPDES permits and seems to indicate that the universe of those non-residential, industrial, potential point source discharges is very low and that there are many potential sources that realistically qualify, and are not participating in the NPDES program. As our MWRA members perform third party reviews for companies that may potentially perform certain work for our members, one of the first questions that is a part of the process is: "Do you and your company have a point source discharge and does that facility have a valid NPDES permit?" On many occasions, the answer is no. So, the NPDES program becomes voluntary for those companies that recognize their responsibilities. For the time being, those not so inclined, fall through the cracks. For the State of Michigan to truly resolve those issues stated as the goals of the project, all properties and companies that qualify must participate in the program.

The draft recognizes and encourages "volunteer organizations", contributing time and efforts testing water for the program. As stated in the draft document, "assistance from landowners, local health departments, conservation districts, other state and local agencies, and environmental groups to focus voluntary improvements in areas where non-point sources are a problem", is encouraged. MWRA objects to other groups performing certified and "qualifying" testing that would be included to establish a TMDL. If groups wish to participate their time and efforts, their contributions should be used as preliminary information only. The Department should then follow up with their own personnel to confirm testing to substantiate any previous testing by volunteer groups.

The current Draft plan states that the Department will post future Integrated Reports on MIWATERS which shall serve as the 30-day public notice. In order to reach more stakeholders, consider in addition to the suggested general posting, a notice through MIWATERS directly to affected permit holders or even better to all permit holders.

The Future Monitoring in section 8, "Demonstration of restoration success or progress" does not provide any detail as to the removal of an area once it is placed under the TMDL. If the Department is putting forth this level of effort to identify impacted areas, it should consider a more robust program to monitor its effects and results. This section needs further consideration.

Several sources of E. Coli are identified within this document. Once an area has been identified as impacted and placed into the TMDL program it is unclear as to what the Departments expectations are of the various sources as new certificate of coverage/permits are issued. Will SWPPP's need to be updated with certain Best Management Practices? If so, can the department provide clarification of what those should look like or contain?

Wildlife is a known contributor to the E. coli problem, (remember the racoon problem, East Bay Township, Grand Travers County?) but preservation and enhancement of many wildlife species and its habitat is also sought as a matter of public policy. Landfills, Transfer Stations, Collection Facilities and Compost Facilities, many with open spaces and storm water retention ponds, can be ideal places to encourage wildlife. In fact, many landfills participate in the Wildlife Habitat Council, whose purpose is to provide habitat enhancement for wildlife. The draft TMDL should recognize that habitat preservation and enhancement does, in fact, take place at certain solid waste facilities and that discouraging wildlife habitat, as suggested in the draft, is counter to the interest of wildlife enhancement programs and related organizations.

Appendix E

Again, thank you for the opportunity to comment. If you or your staff have questions regarding this correspondence, please feel free to contact Keeli Baker at kbaker@mhsa.com or myself at sessling@wm.com.

Sincerely,

Steve Essling
Technical Standards Chairman
Michigan Waste and Recycling Association



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 19 2017

REPLY TO THE ATTENTION OF

WW-16J

Diana Klemens, Chief
Surface Water Assessment Section
Water Resources Division
Michigan Department Environmental Quality
P.O. Box 30273
Lansing, Michigan 48909-7773

Dear Ms. Klemens:

The U.S. Environmental Protection Agency has conducted a review of the Michigan Department of Environmental Quality's (MDEQ) draft 2018 Integrated Report Assessment Methodology, which was on public notice from June 14, 2017 to July 14, 2017. Please find enclosed our comments on the draft Methodology.

We appreciate that MDEQ has taken significant steps to refine its methodology for assessing water quality impairments in response to EPA recommendations. We look forward to continued discussions to ensure MDEQ's Assessment Methodology supports full assessment of Michigan's waters.

Thank you for the opportunity to review this draft Methodology. Please let me know if you have questions regarding our comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Swenson", is written over the word "Sincerely,".

Peter Swenson, Chief
Watersheds and Wetlands Branch

Enclosure.

cc: Kevin Goodwin, MDEQ
Mike Alexander, MDEQ

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SEP 08 2017

Water Resources Division

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U.S. Environmental Protection Agency Comments to MDEQ
regarding draft 2018 Assessment Methodology
July 19, 2017

Comments on Michigan 2018 Draft Integrated Report Assessment Methodology, placed on public notice June 14, 2017:

1. Sections 4.5.2.1 and 4.6.2.1 [Fish Community, Macroinvertebrate Community], pp. 9 and 13: As stated in previous comments on the State's methodology, EPA remains concerned that the threshold levels Michigan uses for listing determinations for Warmwater Fishery and Coldwater Fishery, and Other Indigenous Aquatic Life and Wildlife are at levels which may not fully identify impairment. The Draft Methodology includes attainment thresholds for Wadeable Streams that categorize waters into excellent, acceptable, and poor categories. EPA believes that the threshold for identifying waters between acceptable and poor categories is not stringent enough to capture all impaired waters. In Michigan's response to EPA comments on their 2016 methodology¹, MDEQ agreed that the current thresholds need to be evaluated. Michigan has begun evaluating the macroinvertebrate index and has also indicated an additional need for contractor support. EPA looks forward to continuing our work with MDEQ to resolve issues regarding these threshold levels.
2. Section 4.13 [Delisting Category 5 Assessment Units 4.13], the first bullet on page 29, indicates that the state may move a water body from Category 5 to Category 3 using updated monitoring data or information. Clarification should be made that new data alone will not delist a waterbody/impairment where the State is using the 7-year span for listing. An example of this is in section 4.6.1.1 Water Column Toxic Substance Concentration. For this type of listing determination, the state looks at a seven-year window of the most recent quality assured data. Based on figures 4.1a and 4.1b, if there are ≥ 4 samples collected over any year and ≥ 1 (figure 4.1a) or ≥ 1 or the geometric mean of ≥ 4 (figure 4.1b) samples/results exceed the Water Quality Standard, MDEQ would list the waterbody/impairment as not supporting. EPA guidance recommends that considerations used for delisting waterbodies or impairments should be as stringent as those data and information used to list the waterbody. Therefore, we recommend that the same (or a commensurate) process for listing an impairment should be used for delisting that impairment.

¹ See letter dated December 23, 2015 from Kevin Goodwin, MDEQ to Peter Swenson, USEPA; p3, USEPA Comment IV.

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3. Section 4.8.1.1 [Water Column and Fish tissue Mercury Concentrations], Figure 4.4, at the third decision point (diamond): "Is the geometric mean* > 1.8 ng/l+?", use of * and + indicates there are notes associated with this sentence but we were unable to locate the notes. If there are no notes, please remove the note indicators.

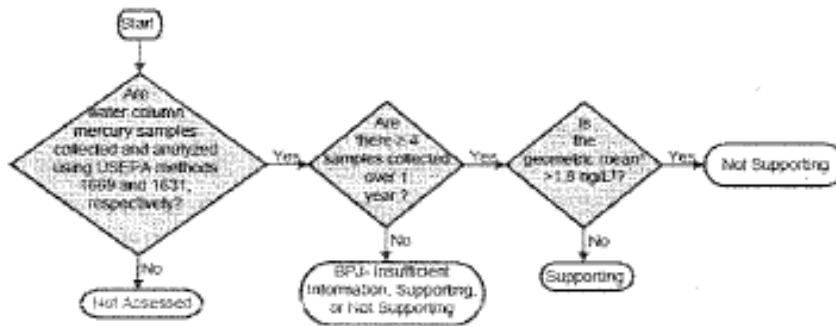


Figure 4.4. Determination of fish consumption designated use support using water column mercury concentration.

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4. Section 4.11 [4.11 Assessment Unit Assignment to Categories], Page 26, first full paragraph states: "An assessment unit is considered threatened and is placed in Categories 4 or 5 when water quality data analysis demonstrates a declining trend that is expected to cause that water body to not attain WQS by the next listing cycle (2018)." Should this be changed to 2020? Alternatively, the reference to the date could be removed entirely.

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2018 IR Final Draft Comments Received:

(via electronic mail 7/26/2019)

We live in the Flower Creek watershed and I would urge DEGLE to review hydrology report by Dr. Hyndman of MSU and water quality study by Dr. Rediske of GVSU as basis to include Flower Creek as an impaired water body.

Thanks
Frederick Kwant
Sent from my iPhone

(via electronic mail 7/28/2019)

As a long time resident of Claybanks township and a property owner who's land borders flower Creek I have watched the water quality deteriorating due to poor farming practices and runoff from agricultural fields. Now with the additional manure from the Flower Creek Swine CAFO 1.5 million gallons per year being applied to fields that have run off and tile drainage that go into flower Creek the water Quality will only get worse in the future. i am asking that you consider adding flower Creek to the impaired waters list in hopes that it will help with the tighter regulations to bring flower Creek back to a stream that can support trout and allow human contact with the water with out fears of ecoli.
Thanks Michael Graham.

(via electronic mail 7/29/2019)

I urge DEGLE to review hydrology report by Dr. Hyndman of MSU and the water quality study by Dr. Rediske of GVSU as basis to include Flower Creek as an impaired water body.

I feel your review is important to Flower Creek & would be appreciated. Thank you.

Doris Graham
Montague, MI 49437

(via electronic mail 7/29/2019)

Mr. Goodwin: This is submitted as public comment re Draft 2018 Integrated Report re water quality. May I respectfully request that DEGLE add Flower Creek, located in northern Muskegon and southern Oceana Counties to its list of impaired water bodies?

Basis for this request is contained in two recent scientific reports, which have been attached to this email. First is Annis Water Resource Institute report prepared by Dr. Richard Rediske of Grand Valley State University. Please refer to details in that report re *e. coli* levels detected, as well as other characteristics including sedimentation and oxygen levels. Second is report re hydrology of Flower Creek prepared by Drs. Hyndman and Kendall of Michigan State University. Significant characteristics include adjacent wetlands, soil types, high water tables, sediment loads and nutrient loads, etc. Those are all set forth in detail. When you take these two reports in context, it is apparent to me that Flower Creek is in jeopardy which warrants heightened attention from DEGLE.

Appendix E

It is my further understanding that Little Flower Creek, located in northern Muskegon County, has similar problems which have also recently been documented by Dr. Rediske of GVSU Anis Water Resource Institute, although unfortunately I do not have a copy of that report to forward to you. Perhaps you can obtain it directly from Dr. Rediske at his email address, which is: redisker@gvsu.edu

Thank you for your attention to this, and for your work protecting our shared environment including the waters of the state which are part of the public trust. May I also request an electronic copy of the final Draft 2018 Integrated Report?

Bruce Froelich

(via electronic mail 7/17/2019)

Dear Kevin and/or Jason:

In reviewing your latest MDEGLE Water Division 2018 report public release/comment workproduct, and specifically Appendix C (Category 5 impaired waters) and D2 [new listings], I am baffled at not being able to find any of the following:

1. Impairments to the Huron River as to one or more PFAS compounds addressing raw water supply and fish tissue concentrations and perhaps also to water column concentrations.
2. Impairments to the Rogue River as to one or more PFAS compounds, as to total and partial body contact recreation
3. Impairments to Van Etten Lake as to one or more PFAS compounds. as to total and partial body contact recreation.

Is it possible that I somehow missed specific contents of the report as to these known problem areas, or is there otherwise a specific reason why these known impairments do not appear in either Appendix C or D2?

Do the 303d list preparers consider the presence of PFAS foam in watercourses as found on the Rogue River and at Van Etten Lake to be an impairment to the protected use of total or partial body contact recreation?

Regards,

Alex Sagady, environmental consultant (retired)
ajs@sagady.com;



July 31, 2019

Kevin Goodwin
Michigan Department of Environmental Quality
Water Resources Division

Dear Mr. Goodwin,

Thank you for the opportunity to comment on the 2018 Integrated Report by EGLE. As you know, the Huron River Watershed Council (HRWC) is a coalition of Huron Valley residents, businesses, and local governments established in 1965 under Michigan's Local River Management Act. The Council protects and restores the river for healthy and vibrant communities. To achieve that, we work with a collaborative and inclusive spirit to give all partners the opportunity to become stewards; we generate science-based, trustworthy information for decision makers to ensure reliable supplies of clean water and resilient natural systems; and we passionately advocate for the health of the river and the lands around it.

The Huron River and many of its tributaries are contaminated with PFAS chemicals. To our knowledge, the Huron River is the only surface waterbody in Michigan that is both used as a drinking water source and is contaminated with PFAS. EGLE's efforts, along with the support of MPART and MDHHS to evaluate the Huron River watershed as a complete entity have been critical to understanding the health risks of PFAS, identifying their sources, and keeping residents of the watershed informed.

The Huron River is also an important economic driver for southeast Michigan. According to a 2016 economic impact study completed by researchers at Grand Valley State University, the Huron has an annual economic output of \$53.5 million. Approximately 125,000 unique visitors access the river corridor every year and, on average, visit 21 times per person per year.

The improved understanding of PFAS chemicals, their contamination of fish and surface waters, and the active health advisory to avoid eating fish from the Huron has amounted to considerable concern among river users. Paddlers and anglers continue to express alarm to HRWC about the risks of PFAS exposure through various pathways, primarily fish consumption. Recent communication materials from state agencies warning about the toxicity of river foam have reinforced those concerns.

Our partner river organizations have indicated that both fishing and recreation have been significantly impaired since the summer of 2018 as the magnitude of PFAS contamination was being realized. Fishing for sustenance has been especially impaired, either through reduced access to public resources or through risks to public health when official advisories go unfollowed. We expect, based on conversations with DNR and MDHHS experts, that even in a scenario in which PFAS contamination sources are rapidly addressed and mitigated, the advisory to avoid fish consumption will remain in place over much of the Huron River for several years.



Appendix E

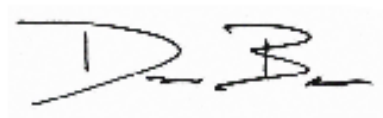
HRWC realizes there is not currently a numeric PFAS standard for listing the Huron River as impaired or for putting in place a TMDL. We also realize there is not currently a non-numeric, descriptive standard for PFAS such as there is for phosphorus, for example. We do, however, want to emphasize the practical and clearly impaired status of the Huron River due to contamination from PFAS pollutants. We request attention be given to establishing a process for listing as impaired the Huron River or other waterbodies affected by PFAS contamination across the state and will be looking for this in the 2020 Integrated Report.

As you know, Governor Whitmer directed MPART to inform the rulemaking process for appropriate PFAS Maximum Contaminant Levels (MCL) for Michigan by no later than July 1, 2019. MPART identified health-based values for 7 PFAS chemicals at significantly more protective levels than the those recommended by the EPA. The Governor also directed EGLE to establish enforceable MCLs for PFAS in drinking water supplies by October 1, 2019. HRWC has been providing input to EGLE staff throughout that rulemaking process and we are confident that MCLs near the MPART health-based values will soon be in effect. These MCLs will provide a numeric reference for PFAS levels in drinking water and may further inform exposure pathways through fish consumption. They will also intensify the need to identify and limit sources of the 7 PFAS chemicals to water bodies, especially those practically impaired by measure of our current understanding.

Thank you for your continued attention to TMDL development. As you are aware, HRWC has a strong track record of working with EGLE to refine and implement plans following TMDL development, and monitoring impaired waters for changes in conditions. We hope that this new focus will allow DEQ staff to allocate more time to monitoring, implementation assistance and enforcement.

Please feel free to contact me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. B.', with a stylized flourish at the end.

Daniel Brown
Watershed Planner

cc:
Ric Lawson, Watershed Planner
Rebecca Esselman, Interim Director



7373 M Seginaw Hwy • Lansing, MI • 48906 • (800) 272-2690 • www.michfbu.com

July 29, 2019

Kevin Goodwin

Michigan Department of Environment, Great Lakes and Energy

Sent via email to: goodwink@michigan.gov

Re: Public Comments on EGLE's 2018 Integrated Public Report

Dear Mr. Goodwin,

Thank you for the opportunity to offer comments on the proposed draft Water Quality and Pollution Control in Michigan 2018 Sections 303(d), 305(b) and 314 Integrated Report. On behalf of Michigan Farm Bureau, I appreciate the opportunity to provide comment on this important report that sets forth the State's assessment of impaired waters for review and approval by the U.S. Environmental Protection Agency.

Michigan Farm Bureau is our state's largest general farm organization, with more than 40,000 farming family members who work hard to be responsible environmental stewards and who support protecting water quality. Our grass roots, member-written policy [supports](#):

- Participation in the Michigan Agriculture Environmental Assurance Program
- The Lake Erie Domestic Action Plan
- The use of sound science methods to determine water quality
- Timely enforcement of water quality standards using credible data
- Additional research on dissolved phosphorus
- Continued education on appropriate phosphorus and other nutrient use

With that support for protecting water quality in mind, we are concerned about Section 4.7 of the Report, entitled "Lake Erie Support Summary." In that section, and by reference in Section 3.9, entitled "Designated Use: Public Water Supply," EGLE makes potentially conflicting statements about its impairment designation of microcystin for drinking water from Lake Erie:

- "The Annex 4 Objectives and Targets Task Team Final Report (May 11, 2015) went through a significant deliberative process to identify sources and loading estimates of total phosphorus to Lake Erie. Based on these goals, the subcommittee set the load targets of 40 percent reductions in total phosphorus entering the western basin, including, and of particular relevance for Michigan, a 40 percent reduction in spring

total and soluble reactive phosphorus (SRP) from the River Raisin, and a 40 percent reduction in spring SRP from the Maumee River, some headwaters to which are in Michigan.” (p. 46)

- “In 2016 the other indigenous aquatic life and wildlife use was listed as impaired based on e [sic] repeated, persistent, and extensive cyanobacteria blooms indicating excessive/nuisance nutrient conditions leading to ecological imbalance. Similarly, data used in this 2018 review supports an impairment designation for the public water supply use in portions of Lake Erie, which are critical assessment zones for drinking water intakes, following the relevant assessment methodology (Chapter 3, Section 3.9.1.5). Raw source water monitoring data showing the presence of microcystins above USEPA’s drinking water guidance values indicates that, without proper treatment and an increased use of technological solutions, the source water of Lake Erie would not be suitable for consumption.” (p. 45)
- “It is important to note that this impairment designation relates to the source water quality only and has no direct relevance to the quality of finished drinking water supplied by treatment systems under the Safe Drinking Water Act. With technological advances and additional treatment, facilities withdrawing drinking water from Lake Erie continue to provide high-quality finished drinking water; this impairment designation serves to recognize impairments to source water quality that necessitate treatment upgrades and increased costs as the result of water quality degradation.” (p. 45)
- “There are no cyanotoxin water quality criteria for the protection of the public water supply designated use. However, the Public Water Supply designated use may be assessed with a combination of total microcystins monitoring data in raw source water and information on the condition of that water body in the vicinity of the intake related to nutrient inputs and other indications of source water quality issues (e.g. documented blooms of algae or cyanobacteria, observed scums, elevated chlorophyll-a).” (p. 36, emphasis added)
- “Because the MCL is a standard applicable after treatment, an exceedance of an MCL will not be used as the basis for a nonattainment determination. Instead, the water body will be assessed as ‘Insufficient Information’ indicating the need for further investigation and additional coordination with EGLE’s, Drinking Water Program, to complete a full assessment.” (p. 34)
- “The USEPA developed health advisory (HA) levels for total microcystins in finished drinking water in 2015. While non-regulatory, these HA levels serve as guidance and provide concentrations at or below which adverse health effects are not anticipated over a 10-day duration. Two HA levels were developed, one (1.6 ug/L) for school-age children through adults and one (0.3 ug/L) for pre-school age children under six years old. Practically speaking, the more conservative HA level of 0.3 ug/L offers a level at which the entire population is protected.” (p. 36, emphasis added)

- “In cases where two or more total microcystins results in surface water exceed the more conservative HA level of 0.3 ug/L in a 3-year period and are supported by documented eutrophication and nuisance nutrient conditions in the same 3-year period (see Section 3.6.2.2) that are likely causative, an assessment of Not Supporting the use may be made. Exceedance of the HA level must be at least 30 days apart to reflect cyanotoxin events that are either repeating frequently, or substantial in duration.” (p. 36, emphasis added)
- “The geometric mean of ambient water sample results from a CAZ will be compared to either the WQS or the MCL, as appropriate following the process in Figure 3.5. Geometric mean is chosen to help interpret the surface water data for WQS or MCL comparison because these levels are based on long-term exposure of humans to surface water for drinking.” (pp. 34-35)

From the above segments of the draft Report taken together, we are concerned the Report will 1) establish inconsistent sampling and water quality standard evaluation compared to sampling and water quality standard evaluation for other toxic substances, and 2) establish a standard potentially unattainable under the currently adopted Domestic Action Plan approved by EGLE and the U.S. EPA for 40 percent phosphorus reduction into Lake Erie by 2025, by setting impairment according to guidance on the most conservative health advisory levels for finished and treated drinking water, rather than water quality of raw source water that has higher productivity and nutrient concentration than the other Great Lakes.

We recommend a reevaluation of the standards under which impairment is determined, which then in turn dictate the water quality standards Lake Erie must attain to be removed from Impaired status, based on the work of the Annex 4 working group and the Lake Erie Domestic Action Plan. These steps are necessary because not only is microcystin’s relationship with water quality more complex than simple calculations of nutrient loading, but also because as referenced in the Report at page 25, nutrient concentrations have a narrative, rather than numeric standard for water quality designation.

Because EPA’s Health Advisory levels for toxic substances are created as non-regulatory guidance and do not include the necessary incorporation of technological and economic feasibility when setting enforceable standards, they may not be an appropriate standard for evaluating Lake Erie water quality standards. We are further concerned that the sampling and criteria established for drinking water under this draft will set up the stakeholders working to manage nutrients with an unachievable standard including continually moving requirements for more and more stringent nutrient reduction goals until the raw source water achieves finished drinking water quality under health advisory guidance and lacking all other technological and economic considerations of meeting drinking water standards.

Appendix E

Thank you for your attention and for the opportunity to express our views. Please feel free to contact me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Laura A. Campbell', is positioned above the printed name.

Laura A. Campbell, Manager
Agricultural Ecology Department

Appendix E

Hello Kevin and Jason

I went through the spreadsheets that you provided to me (of the MI 2018 IR appendices) and compared them to the spreadsheet that I have from the 2016 303(d) list (Appendix C). I also downloaded the PDF versions of the 2016 and 2018 appendices from your website and looked up any discrepancies that I found between the two spreadsheet versions. I provide an explanation below that I hope is not too confusing. I can go into more depth and answer questions during our upcoming Skype meeting on July 12th. I only found 48 entries that I could not account for between the two cycles which overall is not an excessive number compared to the size of the lists. I will also attach a copy of the Excel Workbook ([MI 2016 Final Apdx C for 2018 Comparison.xlsx](#)) that I created to do the analysis. I am not sure how helpful it will be to you. However, we can go over it together in more depth during the Skype meeting. The first two pages present a more abbreviated version of the overall comparison and what I found. I converted the formulas to values on the first page (Missing Impairments) since some of the formulas are looking outside of the workbook for information and may not work once I send it to you. However, the original formulas are on the (2016C_X_Walk) tab if you are interested. I also extracted those first two pages into a separate workbook ([MI 2016 to 18 Comparison \(Brief Version\).xlsx](#)) just in case the main workbook does not function properly away from my file system. Please look these materials over and see what you think. We can discuss them further during our meeting.

Jim Ruppel
EPA Region V
Water Division

Analysis Explanation:

My objective was to ensure that all of the waterbodies on the 2016 Appendix C are accounted for on either the 2018 Appendix C (i.e. still listed) or on the 2018 Appendix D1 (i.e. delisted).

Since the Cause ID numbers are no longer used in 2018, and some of the cause descriptions used in 2018 do not precisely match the cause descriptions used in 2016, I had to create a cause crosswalk for the causes that did not match up between the two cycles. Below is the crosswalk table that I created and used in my analysis. Please give it a look and let me know if anything does not look right to you.

Cause Crosswalk between 2016 and 2018 Cause Descriptions

Cause On 2016 List	Cause on 2018 List
Total Dissolved Solids	TOTAL DISSOLVED SOLIDS (TDS)
Temperature, water	TEMPERATURE
Solids (Suspended/Bedload)	TOTAL SUSPENDED SOLIDS (TSS)
Polychlorinated biphenyls	POLYCHLORINATED BIPHENYLS (PCBS)
Phosphorus (Total)	PHOSPHORUS, TOTAL
pH, High	PH, HIGH
Petroleum Hydrocarbons	PETROLEUM HYDROCARBONS
PCB in Water Column	POLYCHLORINATED BIPHENYLS (PCBS)
PCB in Fish Tissue	PCBS IN FISH TISSUE
Oxygen, Dissolved	DISSOLVED OXYGEN
Other flow regime alterations	FLOW REGIME MODIFICATION

Appendix E

Escherichia coli	ESCHERICHIA COLI (E. COLI)
Direct Habitat Alterations	HABITAT ALTERATIONS
DDT	DDT (DICHLORODIPHENYLTRICHLOROETHANE)
Copper	COPPER

After creating a cross walked cause column for the 2016 causes I combined the Waterbody ID, the Designated Use Description, and the Cause Description for;

- 1) The 2016 Appendix C
- 2) The 2018 Appendix C
- 3) The 2018 Appendix D1 (delistings)

I then created some formulas to look for matching entries between 1 and 2 (indicating the 2016 listing remains in 2018), and 1 and 3 (indicating the 2016 listing has been delisted in 2018).

I was able to account for all but 53 of the listings on the 2016 Appendix C on either the 2018 Appendix C or 2018 Appendix D1.

Five of those missing entries were actually repeated identical entries on the 2016 Appendix C spreadsheet. Though it is curious how the same entry ended up on the appendix more than once, they do not present a problem as far as missing 2016 303d listings go. This leaves 48 entries that I could not account for between the two cycles.

To ensure that these 48 missing entries were not an artifact of the spreadsheet version of the 2016 Appendix C that I was working from, I downloaded the PDF version of the 2016 Appendix C from the MI WWW Page (<https://www.michigan.gov/egle/0,9429,7-135-3313-12711--,00.html>) and looked up the impairments to ensure that they were on that document as well. I did find all 48 listings on the currently posted 2016 PDF version of Appendix C (wrd-swas-ir2016-appC_541407_7.pdf) downloaded from the MI WWW site.

I then downloaded the 2018 PDF version of Appendix C from the same website and looked up the missing (unmatched) entries on that PDF document to ensure that they were missing on the PDF documents as well as on the spreadsheet version of the 2018 Appendix C that you provided me. I was able to confirm that all of the missing entries from the spreadsheet analysis were also missing from the PDF version of the 2018 Appendix C.

I then downloaded the 2018 PDF version of Appendix D1 (delistings) from the same website and looked up the missing entries on that PDF document to see if perhaps some 2018 delistings did not show up (or match up?) on the 2018 spreadsheet that you provided me, but were in fact on the 2018 PDF version. I also then downloaded the PDF version of Appendix B (both halves) to look up the missing entries and see if they could shed some light on what the problem was. Below is a brief summary of what I found.

Appendix E

Summary of findings after looking up missing 2016 Appendix C spreadsheet entries in the downloaded PDF versions of the 2018 Appendices C, D1 and B.		
Note on Spreadsheet Analysis Page	Count	Explanation
Appears to be delisted due to a TMDL but was not included on Appendix D.	14	It appears that 14 of the 2016 entries on Appendix C were intended to be delisted in 2018 due to the completion of a TMDL, but this delisting was not included in either the spreadsheet version or the PDF version of the 2018 Appendix D1.
Appears to be delisted due to WB split but did not show up on spreadsheets provided	4	It appears that 4 of the 2016 entries on Appendix C were delisted in 2018 due to a waterbody assessment unit split, however the delisted entries did not show up on the 2018 Appendix D1 spreadsheets, but do show up on the PDF version of Appendix D1
Duplicate 2016 spreadsheet entry (not a problem)	3	These are duplicate entries in the 2016 spreadsheet and do not present a problem in terms of accounting for 2016 impaired waterbodies overall.
Not Supporting, no TMDL shown in Appendix B, appears like it should be on 2018 list.	4	Based on what I found in the 2018 PDF version of Appendix B, it appears these listing should still be on the 2018 Appendix C
On 2016 but not 2018, not delisted in 2018 nor can I tell from Apndx B what the use support is.	22	There are 22 entries from the 2016 Appendix C that are missing from the 2018 appendices for which I was unable to determine the current status from the 2018 Appendix B
This appears to be a 2018 delisting that did not show up in the spreadsheets provided.	4	There are four 2016 Listings that appear to have been delisted, but did not match up in the 2018 spreadsheets provided.
Triplicate 2016 spreadsheet entry (not a problem)	2	These are triplicate entries in the 2016 spreadsheet and do not present a problem in terms of accounting for 2016 impaired waterbodies overall.

Appendix E

EGLE USEPA Response Summary:

ID#305B	LOCATION	USE_DESC	ATTAINMENT_DESC	CAUSE_NAME
040500050302-02	Includes: Hayworth Creek	Total Body Contact Recreation	Not Supporting	Escherichia coli
040801030302-01	Includes: Bad Axe Creek and Tributaries	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040801030302-01	Includes: Bad Axe Creek and Tributaries	Total Body Contact Recreation	Not Supporting	Escherichia coli
040801030302-02	Includes: Bad Axe Creek and Tributaries	Total Body Contact Recreation	Not Supporting	Escherichia coli
040801030302-02	Includes: Bad Axe Creek and Tributaries	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040500050406-03	Includes: Stony Creek	Total Body Contact Recreation	Not Supporting	Escherichia coli
040500060307-02	Includes: York Creek	Total Body Contact Recreation	Not Supporting	Escherichia coli
040500060307-02	Includes: York Creek	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040500040301-01	Includes: Deer Creek	Total Body Contact Recreation	Not Supporting	Escherichia coli
040500040301-01	Includes: Deer Creek	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040900040201-03	Includes: Johnson Drain	Cold Water Fishery	Not Supporting	Oxygen, Dissolved
040900040201-02	Includes: Sump Drain	Warm Water Fishery	Not Supporting	Oxygen, Dissolved
040500040103-05	Includes: Unnamed Tributary to Gillets	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040601021004-04	Includes: Ruddiman Creek	Warm Water Fishery	Not Supporting	Polychlorinated biphenyls
040801020104-01	Saginaw Bay-Lake Huron, at the end of V	Total Body Contact Recreation	Not Supporting	Escherichia coli
040802030310-02	Includes: BAD RIVER RINGWOOD FOREST	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040802030310-02	Includes: BAD RIVER RINGWOOD FOREST	Total Body Contact Recreation	Not Supporting	Escherichia coli
041000060106-03	Includes: MEDINA DRAIN	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040202030105-02	E. of the Waikiki River/Lake Superior cont	Total Body Contact Recreation	Not Supporting	Escherichia coli
040202030105-02	E. of the Waikiki River/Lake Superior cont	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040700030401-03	Thunder Bay	Total Body Contact Recreation	Not Supporting	Escherichia coli
040500030701-06	Gun Lake, Yankee Springs Recreation Ar	Total Body Contact Recreation	Not Supporting	Escherichia coli
040202030105-02	E. of the Waikiki River/Lake Superior cont	Total Body Contact Recreation	Not Supporting	Escherichia coli
040202030105-02	E. of the Waikiki River/Lake Superior cont	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040601020104-03	E. of Prudenville off Rt. 55.	Total Body Contact Recreation	Not Supporting	Escherichia coli
040802020202-01	Includes: Chippewa River, Indian Creek a	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040201010109-01	Includes: West Branch Duck Creek	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Copper
040201030401-05	Includes: Hills Creek downstream of the	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Copper
040201030401-10	Includes: Owl Creek from coordinates 47	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Copper
040201030401-09	Includes: Owl Creek Tributary from coord	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Copper
040900040202-02	Includes: Travis Drain and Willow Creek	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040201-03	Includes: Johnson Drain	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040406-01	Includes: Ashcroft-Sherwood Drain, Roug	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040405-01	Includes: Rouge, River	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040204-01	Includes: Middle River Rouge d/s Nankin	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040203-08	Includes: Bishop Creek	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040401-01	Includes: Amy Drain and Sunken Bridge	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040303-01	Includes: Lower River Rouge, and Perrin	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040103-01	Includes: Smith Drain and Upper River Rd	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040102-01	Includes: Bell Branch and Terebusi Creek	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040202-01	Includes: Deer Drain, Morgan Drain and S	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
040900040201-02	Includes: Sump Drain	Other Indigenous Aquatic Life and Wildlife	Not Supporting	Oxygen, Dissolved
041000060106-03	Includes: MEDINA DRAIN	Fish Consumption	Not Supporting	PCB in Water Column
041000060106-01	Includes: BEAN CREEK	Fish Consumption	Not Supporting	PCB in Water Column
041000060106-02	Includes: BEAN CREEK	Fish Consumption	Not Supporting	PCB in Water Column
040601021003-12	Includes: Fenner Creek is a tributary to B	Navigation	Not Supporting	Petroleum Hydrocarbons
040700030309-01	Includes: Newton Creek	Warm Water Fishery	Not Supporting	pH, High
040700030309-01	Includes: Newton Creek	Other Indigenous Aquatic Life and Wildlife	Not Supporting	pH, High
040900030103-12	Woodhull Lake Civic Association Public B	Partial Body Contact Recreation	Not Supporting	Escherichia coli
040700030401-03	Thunder Bay	Total Body Contact Recreation	Not Supporting	Escherichia coli
040201050101-04	Includes: Carp Creek from Ishpeming to	Cold Water Fishery	Not Supporting	Oxygen, Dissolved
040801020104-01	Saginaw Bay-Lake Huron, at the end of V	Total Body Contact Recreation	Not Supporting	Escherichia coli
040801020104-01	Saginaw Bay-Lake Huron, at the end of V	Total Body Contact Recreation	Not Supporting	Escherichia coli

	: Mistake made on the delisting query. Will be added to the Delisting Appendix.
	: Appear to be included in the Delisting Appendix. We will take no action on these records unless you have more questions.
	: Duplicate Listing in 2016. No Action Needed.
	: AUIDs moved to 4B. Will be added to Delistings Appendix.
	: Changed to Fully Supporting but Cause not removed. Will be corrected and added to Delisting Appendix.
	: Copper/D.O. Cause moved to only WWF/CWF. We will do as we discussed with old Designated Use being added to Delistings and new DU added to New Listings.
	: PCB Moved from FC to DIALW. We will do as we discussed with old Designated Use being added to Delistings and new DU added to New Listings.
	: Overlooked because it is Navigation. Should still be included on 303(d) list. Will correct.
	: pH Listing mistakenly removed from WWF and DIALW to added TBC and PBC. Will be added back to WWF and DIALW. TBC and PBC will be a New Listing.

***Note...we discovered a number of AUIDs (approximately 120) that were moved to 4A under the Statewide PCB TMDL that were not included in the original TMDL Appendix A. These will be moved back to Category 3 and then moved to 4A in 2020 when we can submit a proper TMDL Addendum.

Appendix E

EGLE Response to 4B support information need in ATTAINS:

AUID	Use	Parameter/Cause	Pollutant	Action	Expected to Attain Date	Rationale
040201010107-02	Other Indigenous Aquatic Life and Wildlife	COPPER	Y	4b	2020	The DEQ Remedial Investigation found that sediments within the portion of Portal Creek had elevated copper concentrations. Removal of sediments in Portal Creek was completed in August 2008. Water chemistry data afterward still shows WQS exceedance. Unclear whether Copper Range Co is still planning any remediation? Contractor surveys performed in 2014 showing poor macro communities. EGLE follow-up needed to see if further actions are planned.
040201030304-01	Other Indigenous Aquatic Life and Wildlife	COPPER	Y	4b	2022	Historical copper mining activities contaminated the sediments of Torch Lake with copper and other heavy metals. The benthic macroinvertebrate community in approximately 75% of Torch Lake has been degraded by copper stamp sands. Elevated copper concentrations in the water column of Torch Lake have also been measured. In 1994, USEPA selected a "no action" remedy (natural attenuation) for the sediments, surface waters, and groundwater of the Torch Lake Superfund Site. Consequently, TMDL development for Torch Lake was unnecessary. EGLE follow-up needed to assess current status.
040601020305-04	Other Indigenous Aquatic Life and Wildlife	COPPER	Y	4b	2020	Non-supporting status is due to contaminated sediments. A sediment removal project occurred in 2005. Several thousand tons of contaminated sediments were removed. Upon completion, the area was sampled and found that a small area still was contaminated the area was redredged to remove as much sediments as possible. 1-2 small areas with remaining contamination (about 3 inches of newly settled sediments that contained elevated levels of organic compounds) were not removed because it was not feasible. The entire site was then covered with sand and gravel. Follow up is needed to re-assess use support.
040601020305-04	Other Indigenous Aquatic Life and Wildlife	POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) (AQUATIC ECOSYSTEMS)	Y	4b	2020	Non-supporting status is due to contaminated sediments. A sediment removal project occurred in 2005. Several thousand tons of contaminated sediments were removed. Upon completion, the area was sampled and found that a small area still was contaminated the area was redredged to remove as much sediments as possible. 1-2 small areas with remaining contamination (about 3 inches of newly settled sediments that contained elevated levels of organic compounds) were not removed because it was not feasible. The entire site was then covered with sand and gravel. Follow up is needed to re-assess use support.
040601020305-04	Other Indigenous Aquatic Life and Wildlife	ZINC	Y	4b	2020	Non-supporting status is due to contaminated sediments. A sediment removal project occurred in 2005. Several thousand tons of contaminated sediments were removed. Upon completion, the area was sampled and found that a small area still was contaminated the area was redredged to remove as much sediments as possible. 1-2 small areas with remaining contamination (about 3 inches of newly settled sediments that contained elevated levels of organic compounds) were not removed because it was not feasible. The entire site was then covered with sand and gravel. Follow up is needed to re-assess use support.
040601020901-03	Warm Water Fishery	DISSOLVED OXYGEN	Y	4b	2020	The Hardy hydropower project, owned and operated by Consumers Energy Company, is required to meet a dissolved oxygen limit of 5 mg/l based on Section 2.1.C of the Water Quality Certification issued on December 10, 1992 and Article 405 of the Federal Energy Regulatory Commission License (License) issued on July 15, 1994. Monitoring to evaluate compliance with the limits is conducted on an ongoing basis as required by Section 4.2 of the 401 Certification and Article 404 of the License. Under Section 5.1 of the 401 Certification and Article 404 of the License, the licensee is required to, in cooperation with the State and Federal Resource Agencies, evaluate the results of the monitoring and if the water quality standards are not met then the licensee must design, test and implement enhancement measures to improve the water quality in the Muskegon River. The licensee is conducting a water quality modeling study to further evaluate mitigation options for DO. The necessary field data were collected in 2007. Simultaneously with the modeling study, the licensee has tested turbine venting to enhance DO at Hardy as described in their 11-18-05 draft report titled Hardy Dissolved Oxygen Mapping and Turbine Venting Study. Additionally, as stated in a 10-08-07 meeting with the Federal and State Resource Agencies, the licensee is planning to replace the #3 turbine at Hardy with one that will provide DO enhancements. - FURTHER EVALUATION NEEDED TO CONFIRM CURRENT STATUS.
040601020903-05	Cold Water Fishery	DISSOLVED OXYGEN	Y	4b	2020	The Hardy hydropower project, owned and operated by Consumers Energy Company, is required to meet a dissolved oxygen limit of 5 mg/l based on Section 2.1.C of the Water Quality Certification issued on December 10, 1992 and Article 405 of the Federal Energy Regulatory Commission License (License) issued on July 15, 1994. Monitoring to evaluate compliance with the limits is conducted on an ongoing basis as required by Section 4.2 of the 401 Certification and Article 404 of the License. Under Section 5.1 of the 401 Certification and Article 404 of the License, the licensee is required to, in cooperation with the State and Federal Resource Agencies, evaluate the results of the monitoring and if the water quality standards are not met then the licensee must design, test and implement enhancement measures to improve the water quality in the Muskegon River. The licensee is conducting a water quality modeling study to further evaluate mitigation options for DO. The necessary field data were collected in 2007. Simultaneously with the modeling study, the licensee has tested turbine venting to enhance DO at Hardy as described in their 11-18-05 draft report titled Hardy Dissolved Oxygen Mapping and Turbine Venting Study. Additionally, as stated in a 10-08-07 meeting with the Federal and State Resource Agencies, the licensee is planning to replace the #3 turbine at Hardy with one that will provide DO enhancements. - FURTHER EVALUATION NEEDED TO CONFIRM CURRENT STATUS.
040601021004-11	Other Indigenous Aquatic Life and Wildlife	CAUSE UNKNOWN	Y	4b	2020	Eight stations within Ryerson Creek (below Getty St.) were sampled for sediment contamination and toxicity. None of these showed a significant toxicity response in sediment toxicity tests. Update 2013: Two locations sampled in 2011. Ryerson Creek u/s Clay Avenue had poor (-5) macros and marginal (94) habitat. Ryerson Creek at Shoreline Dr. d/s Bike Path had poor (-6) macros and good (109) habitat. This AUID is listed as a 4B due to AOC remediation, restoration work, and stream sculpting that occurred in 2012 and will occur in the next couple of years on Ryerson Creek. (2013 update) Follow-up monitoring should occur at these sites during the next basin year.
040601030705-01	Partial Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2021	Update 2014: This water body is being moved to category 4b, due to the progressing CSO elimination plan (regulatory action) that will bring this water body into full compliance with this designated use. This water body will be listed as fully attaining based on the 2005 16-week data set once CSO elimination is complete. (Rippke. 2014) Update 2017: CSO discharges to Manistee Lake continue to occur on a regular basis. Target completion date for CSO control has been updated to 2021. FURTHER ASSESSMENT NEEDED to confirm CSO elimination is progressing.
040601030705-01	Total Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2021	Update 2014: This water body is being moved to category 4b, due to the progressing CSO elimination plan (regulatory action) that will bring this water body into full compliance with this designated use. This water body will be listed as fully attaining based on the 2005 16-week data set once CSO elimination is complete. (Rippke. 2014) Update 2017: CSO discharges to Manistee Lake continue to occur on a regular basis. Target completion date for CSO control has been updated to 2021. FURTHER ASSESSMENT NEEDED to confirm CSO elimination is progressing.

Appendix E

EGLE Response to 4B support information need in ATTAINS (*continued*):

AUID	Use	Parameter/Cause	Pollutant	Action	Expected to Attain		Rationale
					Date		
040601060604-02	Partial Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2022		Sixteen weeks of ambient E. coli data collected in 2007 by the Area of Concern program indicate 30-day geometric mean concentrations were <130 E. coli/100 ml and <10% of samples were >300 E. coli/100 ml. Despite the ambient E. coli data, there is one remaining uncontrolled CSO scheduled for elimination by December 31, 2019 (C. Alexander, 10/2009). Update 2011: Manistique CSO facility is on schedule to have CSOs controlled by 2020
040601060604-02	Total Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2022		Sixteen weeks of ambient E. coli data collected in 2007 by the Area of Concern program indicate 30-day geometric mean concentrations were <130 E. coli/100 ml and <10% of samples were >300 E. coli/100 ml. Despite the ambient E. coli data, there is one remaining uncontrolled CSO scheduled for elimination by December 31, 2019 (C. Alexander, 10/2009). Update 2011: Manistique CSO facility is on schedule to have CSOs controlled by 2020
040601060604-02	Fish Consumption	PCBS IN FISH TISSUE	Y	4b	2026		Area of Concern, PCB sediment cleanup ongoing with onsite work scheduled for completion Dec. 2019. Effects of remediation in fish populations and other local impacts expected by 2026, EGLE reevaluation for use support at that time.
040601060604-02	Fish Consumption	POLYCHLORINATED BIPHENYLS (PCBS)	Y	4b	2026		Area of Concern, PCB sediment cleanup ongoing with onsite work scheduled for completion Dec. 2019. Effects of remediation in fish populations and other local impacts expected by 2026, EGLE reevaluation for use support at that time.
040601060604-02	Other Indigenous Aquatic Life and Wildlife	POLYCHLORINATED BIPHENYLS (PCBS)	Y	4b	2026		Area of Concern, PCB sediment cleanup ongoing with onsite work scheduled for completion Dec. 2019. Effects of remediation in fish populations and other local impacts expected by 2026, EGLE reevaluation for use support at that time.
040700010302-01	Partial Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2021		The Sault Ste. Marie WWTP is in good standing with their schedule of compliance to remedy uncontrolled CSOs. Because the regulatory controls are in place, this area is being changed to category 4b (impaired but TMDL not needed due to regulatory controls) (Rippke, 6/2013) Update 2017: According to their current/active permit, uncontrolled or untreated CSO discharges from the city of Sault Ste. Marie will be a violation beginning in 2018. Their project performance certification date is 2020
040700010302-01	Total Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2021		The Sault Ste. Marie WWTP is in good standing with their schedule of compliance to remedy uncontrolled CSOs. Because the regulatory controls are in place, this area is being changed to category 4b (impaired but TMDL not needed due to regulatory controls) (Rippke, 6/2013) Update 2017: According to their current/active permit, uncontrolled or untreated CSO discharges from the city of Sault Ste. Marie will be a violation beginning in 2018. Their project performance certification date is 2020
040802020401-01	Fish Consumption	DDT (DICHLORODIPHENYLTRICHLOROETHANE)	Y	4b	2020		EPA conducted an "Emergency Removal" of highly contaminated sediments and a "remedial removal" of contaminated sediments to be completed by 2002. The 1999 FCA indicates that all fish species contain elevated levels of PBB and DDT. 2001 update: Pine River and impoundment sediment removal project in progress to be completed in 2003, therefore, delisted (4b) from Section 303(d) TMDL list. Update 2004: FCA-PBBs, DDT contaminated sediment removal still in progress. 2005 Update: No new fish contaminant data. No change to FCA. The reach is Category 4b because of FCA-PBB, DDT impaired condition and sediment cleanup Pine River/St. Louis Impoundment, some level of clean up is ongoing (2019). EGLE follow-up is needed to confirm that activities to address PBB/DDT are ongoing or planned and reassess use support.
040802020401-01	Fish Consumption	POLYBROMINATED BIPHENYLS	Y	4b	2020		EPA conducted an "Emergency Removal" of highly contaminated sediments and a "remedial removal" of contaminated sediments to be completed by 2002. The 1999 FCA indicates that all fish species contain elevated levels of PBB and DDT. 2001 update: Pine River and impoundment sediment removal project in progress to be completed in 2003, therefore, delisted (4b) from Section 303(d) TMDL list. Update 2004: FCA-PBBs, DDT contaminated sediment removal still in progress. 2005 Update: No new fish contaminant data. No change to FCA. The reach is Category 4b because of FCA-PBB, DDT impaired condition and sediment cleanup Pine River/St. Louis Impoundment, some level of clean up is ongoing (2019). EGLE follow-up is needed to confirm that activities to address PBB/DDT are ongoing or planned and reassess use support.
040802020402-01	Fish Consumption	DDT (DICHLORODIPHENYLTRICHLOROETHANE)	Y	4b	2020		EPA conducted an "Emergency Removal" of highly contaminated sediments and a "remedial removal" of contaminated sediments to be completed by 2002. The 1999 FCA indicates that all fish species contain elevated levels of PBB and DDT. 2001 update: Pine River and impoundment sediment removal project in progress to be completed in 2003, therefore, delisted (4b) from Section 303(d) TMDL list. Update 2004: FCA-PBBs, DDT contaminated sediment removal still in progress. 2005 Update: No new fish contaminant data. No change to FCA. The reach is Category 4b because of FCA-PBB, DDT impaired condition and sediment cleanup Pine River/St. Louis Impoundment, some level of clean up is ongoing (2019). EGLE follow-up is needed to confirm that activities to address PBB/DDT are ongoing or planned and reassess use support.
040802020402-01	Fish Consumption	POLYBROMINATED BIPHENYLS	Y	4b	2020		EPA conducted an "Emergency Removal" of highly contaminated sediments and a "remedial removal" of contaminated sediments to be completed by 2002. The 1999 FCA indicates that all fish species contain elevated levels of PBB and DDT. 2001 update: Pine River and impoundment sediment removal project in progress to be completed in 2003, therefore, delisted (4b) from Section 303(d) TMDL list. Update 2004: FCA-PBBs, DDT contaminated sediment removal still in progress. 2005 Update: No new fish contaminant data. No change to FCA. The reach is Category 4b because of FCA-PBB, DDT impaired condition and sediment cleanup Pine River/St. Louis Impoundment, some level of clean up is ongoing (2019). EGLE follow-up is needed to confirm that activities to address PBB/DDT are ongoing or planned and reassess use support.
040802020403-01	Fish Consumption	DDT (DICHLORODIPHENYLTRICHLOROETHANE)	Y	4b	2020		EPA conducted an "Emergency Removal" of highly contaminated sediments and a "remedial removal" of contaminated sediments to be completed by 2002. The 1999 FCA indicates that all fish species contain elevated levels of PBB and DDT. 2001 update: Pine River and impoundment sediment removal project in progress to be completed in 2003, therefore, delisted (4b) from Section 303(d) TMDL list. Update 2004: FCA-PBBs, DDT contaminated sediment removal still in progress. 2005 Update: No new fish contaminant data. No change to FCA. The reach is Category 4b because of FCA-PBB, DDT impaired condition and sediment cleanup Pine River/St. Louis Impoundment, some level of clean up is ongoing (2019). EGLE follow-up is needed to confirm that activities to address PBB/DDT are ongoing or planned and reassess use support.
040802020403-01	Fish Consumption	POLYBROMINATED BIPHENYLS	Y	4b	2020		EPA conducted an "Emergency Removal" of highly contaminated sediments and a "remedial removal" of contaminated sediments to be completed by 2002. The 1999 FCA indicates that all fish species contain elevated levels of PBB and DDT. 2001 update: Pine River and impoundment sediment removal project in progress to be completed in 2003, therefore, delisted (4b) from Section 303(d) TMDL list. Update 2004: FCA-PBBs, DDT contaminated sediment removal still in progress. 2005 Update: No new fish contaminant data. No change to FCA. The reach is Category 4b because of FCA-PBB, DDT impaired condition and sediment cleanup Pine River/St. Louis Impoundment, some level of clean up is ongoing (2019). EGLE follow-up is needed to confirm that activities to address PBB/DDT are ongoing or planned and reassess use support.

EGLE Response to 4B support information need in ATTAINS (*continued*):

[illegible]

Appendix E

EGLE Response to 4B support information need in ATTAINS (*continued*):

AUID	Use	Parameter/Cause	Pollutant	Action	Expected to Attain Date	Rationale
040802020404-02	Fish Consumption	DDT (DICHLORODIPHENYLTRICHLOROETHANE)	Y	4b	2020	EPA conducted an "Emergency Removal" of highly contaminated sediments and a "remedial removal" of contaminated sediments to be completed by 2002. The 1999 FCA indicates that all fish species contain elevated levels of PBB and DDT. 2001 update: Pine River and impoundment sediment removal project in progress to be completed in 2003, therefore, delisted (4b) from Section 303(d) TMDL list. Update 2004: FCA-PBBs, DDT contaminated sediment removal still in progress. 2005 Update: No new fish contaminant data. No change to FCA. The reach is Category 4b because of FCA-PBB, DDT impaired condition and sediment cleanup Pine River/St. Louis Impoundment, some level of clean up is ongoing (2019). EGLE follow-up is needed to confirm that activities to address PBB/DDT are ongoing or planned and reassess use support.
040802020404-02	Fish Consumption	POLYBROMINATED BIPHENYLS	Y	4b	2020	EPA conducted an "Emergency Removal" of highly contaminated sediments and a "remedial removal" of contaminated sediments to be completed by 2002. The 1999 FCA indicates that all fish species contain elevated levels of PBB and DDT. 2001 update: Pine River and impoundment sediment removal project in progress to be completed in 2003, therefore, delisted (4b) from Section 303(d) TMDL list. Update 2004: FCA-PBBs, DDT contaminated sediment removal still in progress. 2005 Update: No new fish contaminant data. No change to FCA. The reach is Category 4b because of FCA-PBB, DDT impaired condition and sediment cleanup Pine River/St. Louis Impoundment, some level of clean up is ongoing (2019). EGLE follow-up is needed to confirm that activities to address PBB/DDT are ongoing or planned and reassess use support.
040802030101-01	Fish Consumption	PCBS IN FISH TISSUE	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040802030101-01	Fish Consumption	POLYCHLORINATED BIPHENYLS (PCBS)	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040802030103-01	Fish Consumption	PCBS IN FISH TISSUE	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040802030103-01	Fish Consumption	POLYCHLORINATED BIPHENYLS (PCBS)	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040802030110-01	Fish Consumption	PCBS IN FISH TISSUE	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040802030110-01	Fish Consumption	POLYCHLORINATED BIPHENYLS (PCBS)	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040802030202-01	Fish Consumption	PCBS IN FISH TISSUE	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040802030202-01	Fish Consumption	POLYCHLORINATED BIPHENYLS (PCBS)	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040802030209-01	Fish Consumption	PCBS IN FISH TISSUE	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.

Appendix E

EGLE Response to 4B support information need in ATTAINS (*continued*):

AUID	Use	Parameter/Cause	Pollutant	Action	Expected to Attain Date	Rationale
040802030209-01	Fish Consumption	POLYCHLORINATED BIPHENYLS (PCBS)	Y	4b	2020	Fish advisory due to PCBs. Current source is in-place sediments. Original source was Cast Forge. Fish tissue analysis of fish collected in 1987 and 1995 indicated elevated concentrations of PCBs greater than the MDPH's 2.0 mg/kg trigger level. Update 2003: RRD indicates that EPA has contracted a contaminated sediment clean up scheduled for April-May 2004 in a 1.5 mile reach beginning in the vicinity of the old Caste Forge/Hoover Ball Bearing facility. Approved ROD with USEPA lead and placed in Category 4b (11/2003). 2005 Update: No new fish contaminant data. EGLE Follow-up needed to confirm clean-up success and assess designated use.
040803000001-18	Public Water Supply	EUTROPHICATION	Y	4b	2020	Previous 305(b) reports have indicated in the narrative that Saginaw Bay is periodically impaired for drinking water because of elevated nutrients and resulting taste and odor (T&O) issues. Update 2010: T&O issue was removed as a BUI in the Saginaw River/Bay RAP. In 2009, WB District DW program staff indicated that T&O issues in the treated water are infrequent and WB SWAS staff determined that Microcystis typically is not an algae associated with T&O issues. In 2008, NOAA initiated a 5 year study of Saginaw Bay to generate a better understanding of the multiple stressors which are affecting the character of both the near-shore and open water regions of Saginaw Bay. This extensive study has a portion of the research devoted to generating information about the occurrence of Microcystis and other blue green algae in the bay that may be affecting T&O and if this issue is different from other selected drinking water intakes in the bay. This AUID has a 4b status because a target TP concentration of 15 ug/l, which should help control nuisance blue green algal growths, has been established for the bay and, over time, a wide range of land use BMPs and TP control efforts have been initiated in the Saginaw Bay watershed to help move toward achieving the bay TP target. 2019: EGLE follow up needed to confirm whether T&O continues to be an issue impacting intakes and assess the use based on that updated information.
040803000001-18	Public Water Supply	NUTRIENT/EUTROPHICATION BIOLOGICAL INDICATORS	Y	4b	2020	Previous 305(b) reports have indicated in the narrative that Saginaw Bay is periodically impaired for drinking water because of elevated nutrients and resulting taste and odor (T&O) issues. Update 2010: T&O issue was removed as a BUI in the Saginaw River/Bay RAP. In 2009, WB District DW program staff indicated that T&O issues in the treated water are infrequent and WB SWAS staff determined that Microcystis typically is not an algae associated with T&O issues. In 2008, NOAA initiated a 5 year study of Saginaw Bay to generate a better understanding of the multiple stressors which are affecting the character of both the near-shore and open water regions of Saginaw Bay. This extensive study has a portion of the research devoted to generating information about the occurrence of Microcystis and other blue green algae in the bay that may be affecting T&O and if this issue is different from other selected drinking water intakes in the bay. This AUID has a 4b status because a target TP concentration of 15 ug/l, which should help control nuisance blue green algal growths, has been established for the bay and, over time, a wide range of land use BMPs and TP control efforts have been initiated in the Saginaw Bay watershed to help move toward achieving the bay TP target. 2019: EGLE follow up needed to confirm whether T&O continues to be an issue impacting intakes and assess the use based on that updated information.
040803000001-18	Public Water Supply	PHOSPHORUS, TOTAL	Y	4b	2020	Previous 305(b) reports have indicated in the narrative that Saginaw Bay is periodically impaired for drinking water because of elevated nutrients and resulting taste and odor (T&O) issues. Update 2010: T&O issue was removed as a BUI in the Saginaw River/Bay RAP. In 2009, WB District DW program staff indicated that T&O issues in the treated water are infrequent and WB SWAS staff determined that Microcystis typically is not an algae associated with T&O issues. In 2008, NOAA initiated a 5 year study of Saginaw Bay to generate a better understanding of the multiple stressors which are affecting the character of both the near-shore and open water regions of Saginaw Bay. This extensive study has a portion of the research devoted to generating information about the occurrence of Microcystis and other blue green algae in the bay that may be affecting T&O and if this issue is different from other selected drinking water intakes in the bay. This AUID has a 4b status because a target TP concentration of 15 ug/l, which should help control nuisance blue green algal growths, has been established for the bay and, over time, a wide range of land use BMPs and TP control efforts have been initiated in the Saginaw Bay watershed to help move toward achieving the bay TP target. 2019: EGLE follow up needed to confirm whether T&O continues to be an issue impacting intakes and assess the use based on that updated information.
040803000001-18	Public Water Supply	TASTE	Y	4b	2020	Previous 305(b) reports have indicated in the narrative that Saginaw Bay is periodically impaired for drinking water because of elevated nutrients and resulting taste and odor (T&O) issues. Update 2010: T&O issue was removed as a BUI in the Saginaw River/Bay RAP. In 2009, WB District DW program staff indicated that T&O issues in the treated water are infrequent and WB SWAS staff determined that Microcystis typically is not an algae associated with T&O issues. In 2008, NOAA initiated a 5 year study of Saginaw Bay to generate a better understanding of the multiple stressors which are affecting the character of both the near-shore and open water regions of Saginaw Bay. This extensive study has a portion of the research devoted to generating information about the occurrence of Microcystis and other blue green algae in the bay that may be affecting T&O and if this issue is different from other selected drinking water intakes in the bay. This AUID has a 4b status because a target TP concentration of 15 ug/l, which should help control nuisance blue green algal growths, has been established for the bay and, over time, a wide range of land use BMPs and TP control efforts have been initiated in the Saginaw Bay watershed to help move toward achieving the bay TP target. 2019: EGLE follow up needed to confirm whether T&O continues to be an issue impacting intakes and assess the use based on that updated information.
040803000001-19	Public Water Supply	EUTROPHICATION	Y	4b	2020	Previous 305(b) reports have indicated in the narrative that Saginaw Bay is periodically impaired for drinking water because of elevated nutrients and resulting taste and odor (T&O) issues. Update 2010: T&O issue was removed as a BUI in the Saginaw River/Bay RAP. In 2009, WB District DW program staff indicated that T&O issues in the treated water are infrequent and WB SWAS staff determined that Microcystis typically is not an algae associated with T&O issues. In 2008, NOAA initiated a 5 year study of Saginaw Bay to generate a better understanding of the multiple stressors which are affecting the character of both the near-shore and open water regions of Saginaw Bay. This extensive study has a portion of the research devoted to generating information about the occurrence of Microcystis and other blue green algae in the bay that may be affecting T&O and if this issue is different from other selected drinking water intakes in the bay. This AUID has a 4b status because a target TP concentration of 15 ug/l, which should help control nuisance blue green algal growths, has been established for the bay and, over time, a wide range of land use BMPs and TP control efforts have been initiated in the Saginaw Bay watershed to help move toward achieving the bay TP target. 2019: EGLE follow up needed to confirm whether T&O continues to be an issue impacting intakes and assess the use based on that updated information.

Appendix E

EGLE Response to 4B support information need in ATTAINS (*continued*):

AUID	Use	Parameter/Cause	Pollutant	Action	Expected to Attain Date	Rationale
040803000001-19	Public Water Supply	NUTRIENT/EUTROPHICATION BIOLOGICAL INDICATORS	Y	4b	2020	Previous 305(b) reports have indicated in the narrative that Saginaw Bay is periodically impaired for drinking water because of elevated nutrients and resulting taste and odor (T&O) issues. Update 2010: T&O issue was removed as a BUI in the Saginaw River/Bay RAP. In 2009, WB District DW program staff indicated that T&O issues in the treated water are infrequent and WB SWAS staff determined that Microcystis typically is not an algae associated with T&O issues. In 2008, NOAA initiated a 5 year study of Saginaw Bay to generate a better understanding of the multiple stressors which are affecting the character of both the near-shore and open water regions of Saginaw Bay. This extensive study has a portion of the research devoted to generating information about the occurrence of Microcystis and other blue green algae in the bay that may be affecting T&O and if this issue is different from other selected drinking water intakes in the bay. This AUID has a 4b status because a target TP concentration of 15 ug/l, which should help control nuisance blue green algal growths, has been established for the bay and, over time, a wide range of land use BMPs and TP control efforts have been initiated in the Saginaw Bay watershed to help move toward achieving the bay TP target. 2019: EGLE follow up needed to confirm whether T&O continues to be an issue impacting intakes and assess the use based on that updated information.
040803000001-19	Public Water Supply	PHOSPHORUS, TOTAL	Y	4b	2020	Previous 305(b) reports have indicated in the narrative that Saginaw Bay is periodically impaired for drinking water because of elevated nutrients and resulting taste and odor (T&O) issues. Update 2010: T&O issue was removed as a BUI in the Saginaw River/Bay RAP. In 2009, WB District DW program staff indicated that T&O issues in the treated water are infrequent and WB SWAS staff determined that Microcystis typically is not an algae associated with T&O issues. In 2008, NOAA initiated a 5 year study of Saginaw Bay to generate a better understanding of the multiple stressors which are affecting the character of both the near-shore and open water regions of Saginaw Bay. This extensive study has a portion of the research devoted to generating information about the occurrence of Microcystis and other blue green algae in the bay that may be affecting T&O and if this issue is different from other selected drinking water intakes in the bay. This AUID has a 4b status because a target TP concentration of 15 ug/l, which should help control nuisance blue green algal growths, has been established for the bay and, over time, a wide range of land use BMPs and TP control efforts have been initiated in the Saginaw Bay watershed to help move toward achieving the bay TP target. 2019: EGLE follow up needed to confirm whether T&O continues to be an issue impacting intakes and assess the use based on that updated information.
040803000001-19	Public Water Supply	TASTE	Y	4b	2020	Previous 305(b) reports have indicated in the narrative that Saginaw Bay is periodically impaired for drinking water because of elevated nutrients and resulting taste and odor (T&O) issues. Update 2010: T&O issue was removed as a BUI in the Saginaw River/Bay RAP. In 2009, WB District DW program staff indicated that T&O issues in the treated water are infrequent and WB SWAS staff determined that Microcystis typically is not an algae associated with T&O issues. In 2008, NOAA initiated a 5 year study of Saginaw Bay to generate a better understanding of the multiple stressors which are affecting the character of both the near-shore and open water regions of Saginaw Bay. This extensive study has a portion of the research devoted to generating information about the occurrence of Microcystis and other blue green algae in the bay that may be affecting T&O and if this issue is different from other selected drinking water intakes in the bay. This AUID has a 4b status because a target TP concentration of 15 ug/l, which should help control nuisance blue green algal growths, has been established for the bay and, over time, a wide range of land use BMPs and TP control efforts have been initiated in the Saginaw Bay watershed to help move toward achieving the bay TP target. 2019: EGLE follow up needed to confirm whether T&O continues to be an issue impacting intakes and assess the use based on that updated information.
040900010001-04	Partial Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2022	Port Huron WWTP has controlled all but one CSO outfall. This remaining outfall (Riverside & McPherson) discharges small volumes on a regular basis and is currently scheduled to be controlled through separation of combined sewers by 2022
040900010001-04	Total Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2022	Port Huron WWTP has controlled all but one CSO outfall. This remaining outfall (Riverside & McPherson) discharges small volumes on a regular basis and is currently scheduled to be controlled through separation of combined sewers by 2023
040900010001-08	Partial Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2022	Port Huron WWTP has controlled all but one CSO outfall. This remaining outfall (Riverside & McPherson) discharges small volumes on a regular basis and is currently scheduled to be controlled through separation of combined sewers by 2024
040900010001-08	Total Body Contact Recreation	ESCHERICHIA COLI (E. COLI)	Y	4b	2022	Port Huron WWTP has controlled all but one CSO outfall. This remaining outfall (Riverside & McPherson) discharges small volumes on a regular basis and is currently scheduled to be controlled through separation of combined sewers by 2025